AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) ~~Process~~ A process for ~~carrying out extractions whereby~~ extracting a substance from one of at least two immiscible fluid phases comprising the steps of:

~~at least two immiscible fluid phases are mixed with one another, and~~

~~at least one of the phases contains at least one substance that is extractable with the other phase,~~

~~and whereby the mixing is carried out by use of at least one static micromixer provided with at least one component in the form of a disk (1) and whereby said disk (1) has~~

~~at least one inlet opening (2) for the introduction of at least one fluid stream into a linking channel (3) disposed in the plane of the disk and at least one outlet opening (4) for the outflow of the fluid stream into a mixing zone (5) disposed in the plane of the disk,~~

~~whereby the inlet opening (2) is connected with the outlet opening (4) through a linking channel (3) disposed in a communicating manner in the plane of the disk and~~

~~whereby the linking channel (3) before opening into the mixing zone (5) is divided by microstructure units (6) into two or more part channels (7), the widths of the part channels being in the millimeter to submillimeter range and being smaller than the width of the mixing zone (5)~~

a) providing at least a first fluid and a second fluid that, after mixing, form at least two immiscible fluid phases, wherein the first fluid contains at least one substance that is extractable by the second fluid;

b) mixing the first fluid and second fluid by means of at least one static micromixer; and

c) allowing the at least two immiscible fluid layers to separate wherein:

said at least one static micromixer comprises at least one component in the form of a disk (1);

said disk (1) comprises a single mixing zone (5), at least one inlet opening (2) disposed in a plane of said disk for introduction of at least one feed stream into a linking channel (3) and with at least one outlet opening (4) disposed in the plane of said disk for outflow of the feed stream directly into said single mixing zone (5), said at least one inlet opening (2) being connected with said at least one outlet opening (4) in a communicating manner via said linking channel (3) which is disposed in the plane of said disk;

said linking channel (3) is divided into two or more part channels (7) by microstructure units (6) immediately before opening into the mixing zone (5), and each of the part channels (7) has a respective width in a millimeter to sub-millimeter range that is smaller than a width of the mixing zone (5); and

said microstructure units (6) are in contact with said mixing zone.

2. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein the micromixer ~~has~~ comprises a housing (11), ~~with~~ at least 2 fluid inlets (12a), and at least one fluid outlet (16), and the housing (11) contains ~~at least one~~ two or more ~~disk-shaped~~ of said at least one components in the form of a disk (1) arranged into a stack.

3. (currently amended) ~~Process~~ The process as defined in claim 2, ~~characterized by~~ wherein ~~the use of~~ wherein a plurality of ~~several~~ disks (1) are superposed on one another so that the inlet openings (2) form subsidiary channels for introducing the liquid phase that is to be mixed, the mixing zones (5) together form a main channel for removing the mixed phase and the main channel and subsidiary channels extend through the stack.

4. (currently amended) ~~Process~~ The process as defined in claim 3, ~~characterized in that~~ wherein ~~the~~ an extraction agent is conveyed through the main channel and the ~~phase~~

first fluid containing the substance to be extracted is conveyed through at least one subsidiary channel of the micromixer.

5. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein, at the outlet into the mixing zone (5), the widths of the part channels (7) of the disks (1) ~~amount to~~ are from 1 µm to 2 mm.

6. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein the ratio of the greatest width of the linking channel (3) and/or the width of the inlet opening (2) to the width of the part channels (7) of the at least one disks (1) is greater than 2.

7. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein the ratio of the length to the width of the part channels (7) of the at least one disks (1) is from 1:1 to 20:1.

8. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein the ratio of the width of the mixing zone (5) to the width of the part channels (7) of the at least one disks (1) is greater than 2.

9. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein the at least one disk (1) is additionally provided with at least one flow-through opening (9).

10. (currently amended) ~~Process~~ The process as defined in claim 1 ~~characterized in that~~ wherein at least one of the inlet openings (2) or flow-through openings (9) or the mixing zone (5) of the at least one disk (1) is enclosed by the plane of the disk and the linking channel (3) is formed by an indentation.

11. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein at least one of the inlet openings (2) or flow-through openings (9) or the

mixing zone (5) of the at least one disk (1) is disposed at the edge of the disk or as a recess at the edge of the disk.

12. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein the at least one disk (1) is provided with at least two inlet openings (2) for at least two different fluid streams and each inlet opening (2) is connected with the mixing zone (5) through a linking channel (3).

13. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein the at least one disk (1) is provided with two inlet openings (2) for two different fluid streams, each inlet opening (2) being connected with the mixing zone (5) through a linking channel (3), and the outlet openings (4) of the two linking channels (3) are disposed opposite one another.

14. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein the outlet openings (4) of the at least one disk (1) are arranged on a circular line.

15. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein the at least one disk (1) is provided with additional through-holes (12) and additional part channels (13) that are integrated into the microstructure units (6) and are separated from the part channels (7).

16. (currently amended) ~~Process~~ The process as defined in claim ~~1~~ 3, ~~characterized in that~~ wherein the linking channels (3) of the disks (1) are formed by indentations, and the linking channels (3) before opening into the mixing zone (5) are divided into part channels (7) by the microstructure units (6) disposed on the disks (1).

17. (currently amended) ~~Process~~ The process as defined in claim ~~1~~ 3, ~~characterized in that~~ wherein the linking channels (3) of the disks (1) are formed by recesses in the disks (1), the disks being disposed as intermediate disks between a cover disk and a bottom

disk, and the linking channels (3) before opening into the mixing zone (5) are divided into part channels (7) by microstructure units (6) disposed on the cover disks and/or bottom disks.

18. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein the flow rate of the fluid stream into the mixing zone (5) is greater than the flow rate of the fluid mixture within the mixing zone.

19. (currently amended) ~~Process~~ The process as defined in claim 1, ~~characterized in that~~ wherein the mixing in the mixing zone occurs at least in part by turbulence.